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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/025,960	12/26/2001	Yoichiro Tanaka	P 290559 T2TT-01S0507-1	2166
909	7590	03/15/2004	EXAMINER MILLER, BRIAN E	
PILLSBURY WINTHROP, LLP P.O. BOX 10500 MCLEAN, VA 22102			ART UNIT 2652	PAPER NUMBER

DATE MAILED: 03/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/025,960

Applicant(s)

TANAKA, YOICHIRO

Examiner

Brian E. Miller

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 12/26/01.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

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Claims 1-8 are pending.

***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

***Specification***

2. The disclosure is objected to because of the following informalities: (a) page 5, line 11, the heading should be changed to read: "BRIEF DESCRIPTION OF THE DRAWINGS".

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. (a) Claim 1, lines 10-15, the language "when outputting a read signal...from the disk medium is suppressed," is misdescriptive and renders the claim incomplete. The claim(s) does not set forth sufficient structure to produce the claimed results. Furthermore, the language "is suppressed" is a relative term and it is not readily apparent as to what this is compared to; (b) similarly, claims 2-6 also

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do not claim sufficient structure so as to particularly set forth applicant's invention in order to satisfy the recited results; e.g., re claim 2, what is this hypothetical "linear response dynamic range"; re claim 3, what is this "saturation magnetic field characteristic; re claim 4, what is the hypothetical "maximum value" of the linear response; re claim 5, what is the "maximum magnetic field" of the disk medium;

(c) claim 7, line 6 the phrase "the longitudinal bias for determining an operating point" lacks antecedent basis. Furthermore, it is not readily apparent how this "characteristic" facilitates the direction of the longitudinal bias.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Akiyama et al (US 5,815,342). In so far as the claims are definite and complete, Akiyama et al discloses a perpendicular magnetic recording/reproducing apparatus, as shown mainly in FIGs. 2-5, including: a double-layered perpendicular magnetic disk medium 20, having a magnetic recording layer 23 of perpendicular magnetic anisotropy and a soft magnetic layer 22; a magnetic head 10 containing a read head element 17, for reading data from the disk medium; such that the read head element is considered to encompass GMR type, such that the output read signal

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waveform corresponding to a reproduction magnetic field from the disk medium in which waveform distortion due to leaking magnetic field from the disk medium is suppressed (see col. 7, lines 53-59). As the recited structure has been encompassed by the teachings of Akiyama et al, it is considered, in so far as the limitations have been set forth in claims 2-6, Akiyama et al is considered to meet these parameters. Further, with respect to the relational expression set forth in claim 6, as all the parameters are present in Akiyama et al, and no specific ranges have been set forth, Akiyama et al is considered to encompass this expression as well.

As per claim 7, Akiyama et al further discloses that the disk medium has a bias magnetic field applying layer 25 (see col. 9, lines 61-67) which is considered to encompass the sequentially recited "characteristic" in so far as it has been definitely set forth.

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Akiyama et al in view of Hoshiya et al (US 5,933,297). For a description of Akiyama et al, see the rejection, supra. Although Akiyama et al further discloses a hard magnetic field film 16, they remain silent as to the MR head being a spin-valve type. Hoshiya et al, however, discloses a perpendicular type recording apparatus, which includes a spin-valve type MR read head (see ABSTRACT,

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lines 12+). Spin-valve sensors are well known in the art to produce good high frequency response and higher outputs. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have substituted the MR head of Akiyama et al with the spin-valve sensor of Hoshiya et al. The motivation would have been: having a spin-valve read head would have provided high sensitivity and good signal to noise ratio output, as would have been readily apparent to a skilled artisan, and as taught by Hoshiya et al (see col. 5, lines 41-56).

### ***Conclusion***

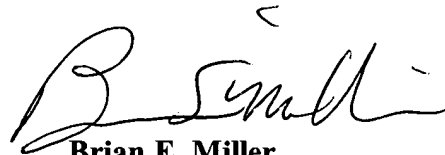
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian E. Miller whose telephone number is (703) 308-2850. The examiner can normally be reached on M-TH 7:15am-4:45pm (and every other friday).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa T. Nguyen can be reached on (703) 305-9687. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "B. Miller", with a small checkmark above the "i".

**Brian E. Miller**  
**Primary Examiner**  
**Art Unit 2652**

Bem  
March 5, 2004